

Pathobiology of ischaemic stroke: an integrated view.

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Brain injury following transient or permanent focal cerebral ischaemia (stroke) develops from a complex series of pathophysiological events that evolve in time and space. In this article, the relevance of excitotoxicity, peri-infarct depolarizations, inflammation and apoptosis to delayed mechanisms of damage within the peri-infarct zone or ischaemic penumbra are discussed. While focusing on potentially new avenues of treatment, the issue of why many clinical stroke trials have so far proved disappointing is addressed. This article provides a framework that can be used to generate testable hypotheses and treatment strategies that are linked to the appearance of specific pathophysiological events within the ischaemic brain.

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